

Broward County Board of County Commissioners

Water Resources Task Force Ocean Outfall Elimination

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Broward County Water and Wastewater Services**

February 6, 2009

Introduction

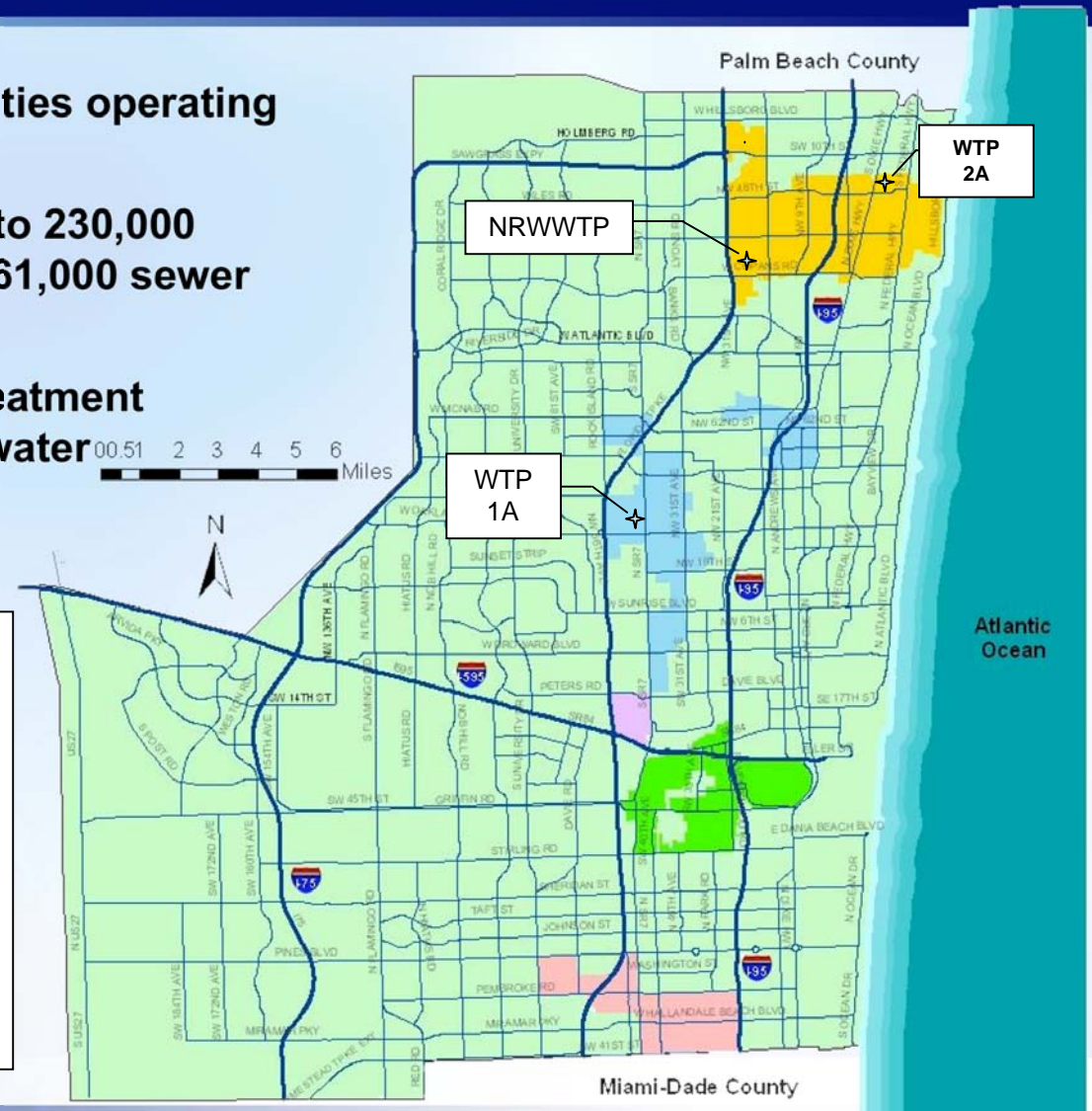
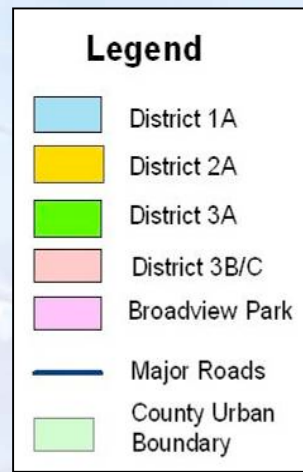
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WWS NRWTP Key Facts

- Broward County operates an 84 MGD activated sludge treatment process plant with capabilities for expansion to 100 MGD based on recent plant upgrades.
- Broward County WWS disposes of wastewater effluent thru three acceptable technologies- ocean outfall, deep well injection and reuse.
- WWS and Hollywood effluent flow through the ocean outfalls account for only 24% of the total County effluent flow. The remaining 76% is disposed of thru deep well and reuse.
- WWS Currently supplies secondary treated effluent to the City of Pompano Beach for their reuse supply. This supply is drawn off of the 54" outfall line.

WWS Service Districts

- One of 28 separate Utilities operating within the County
- Provides retail service to 230,000 water customers and 161,000 sewer customers
- Operates two Water Treatment Plants and one Wastewater Treatment Plant

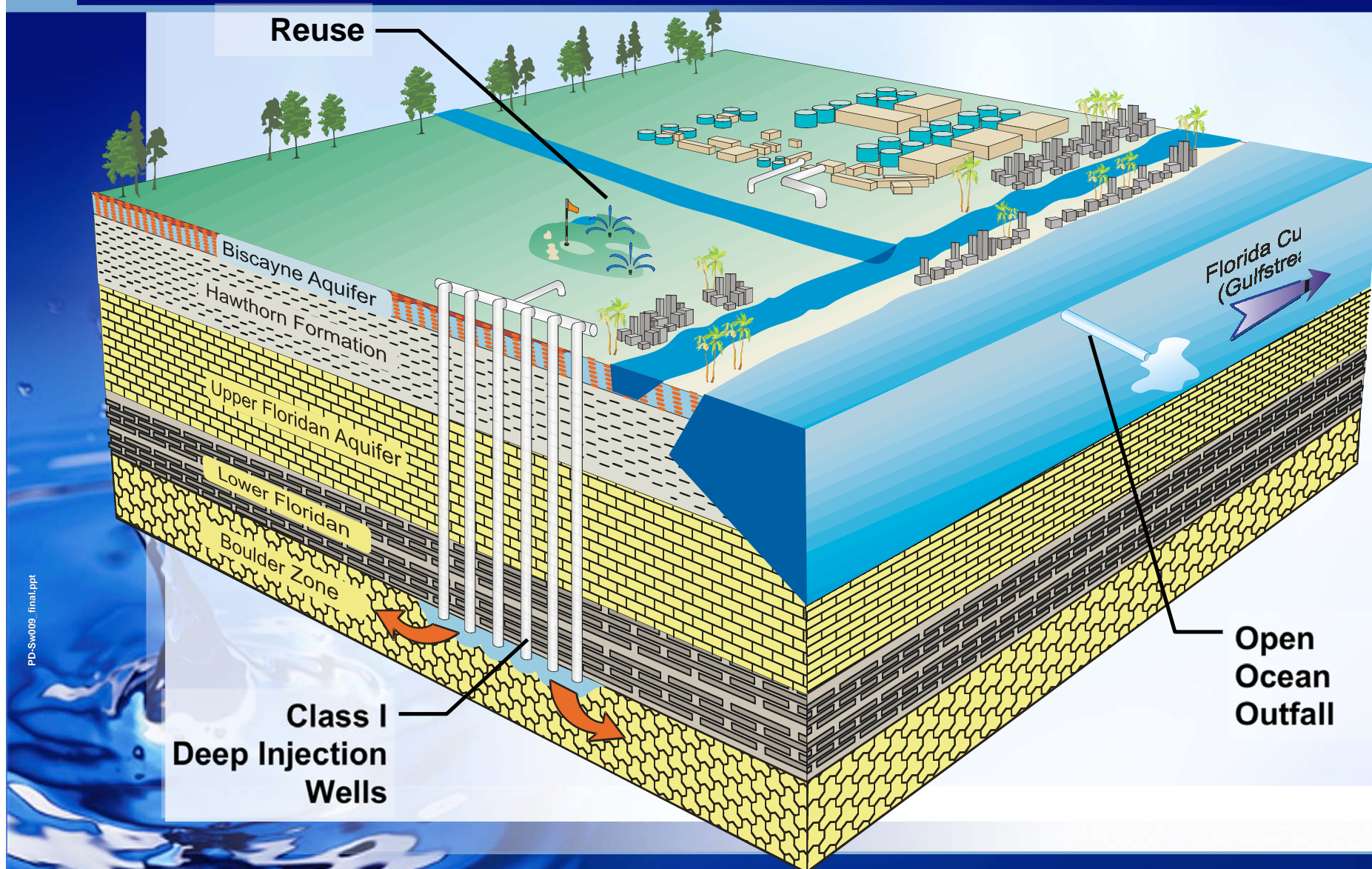


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2006 Aerial of NRWTP



Current Effluent WWS Disposal Technologies



Current Average Effluent Disposal Flows

5 MGD (3.5 WWS + 1.5 Pompano)

Reuse



WWS Reuse Plant



Pompano Reuse Plant



**Class I
Deep Injection
Wells**

34 MGD



**Open
Ocean
Outfall**

34 MGD



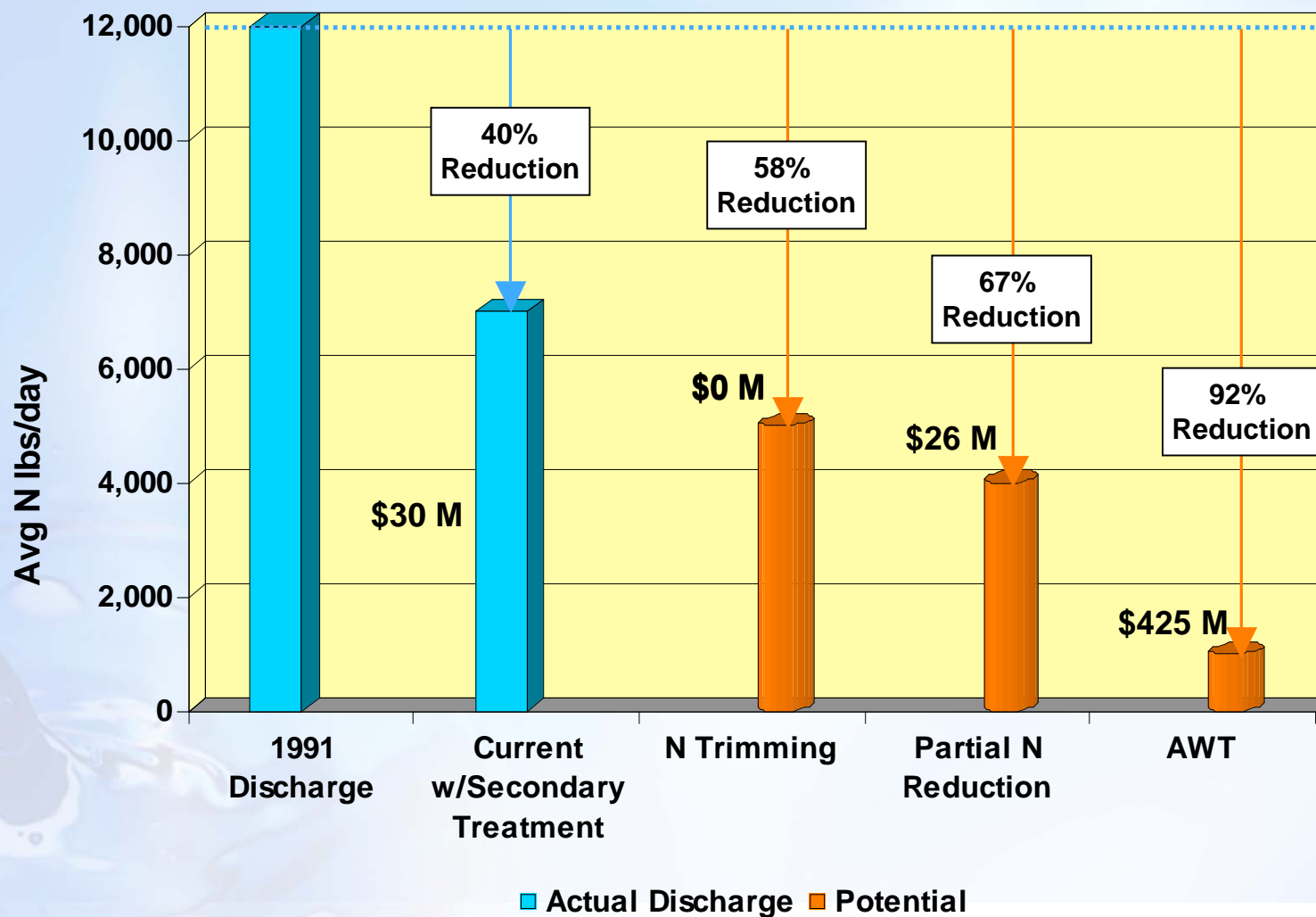
2008 SB 1302 Ocean Outfall Legislation

Key Legislation Impacts to WWS

- WWS mandated to eliminate their ocean outfall by the year 2025 with 60% of the outfall flow being redirected to beneficial reuse. This results in a beneficial reuse requirement of 22 MGD by the year 2025.
- Legislation requires advanced wastewater treatment standards by 2018 or an equivalent reduction in discharged nutrients between now and 2025.
- Elimination of the supply source to the City of Pompano Beach Reuse Plant requires resolution.
- Authorizes SFWMD to require reclaimed water in lieu of alternative sources where environmentally, economically and technically feasible.
- Depending on selected reuse disposal methods, a price tag in the range of \$200 million to \$500 million will be borne by the NRWTP Large Users and the County's retail wastewater customers in Districts 1A and 2A.

Step 1 - Pilot Study Nutrient Reduction

Nitrogen to Ocean Outfall



The Future of Effluent Disposal

Current Options for Disposal

- **Currently, WWS sees these realistic options for beneficial reuse:**
 - ▶ **Groundwater recharge into Lower Floridan**
 - ▶ **Industrial**
 - ▶ **Cooling Towers**
 - ▶ **Slow rate land application (irrigation)**
 - ▶ **Hydrodynamic Barriers**
 - ▶ **Rapid Infiltration Basins (not very feasible to due open land requirements)**

Locations of Existing Wellfields within Broward County

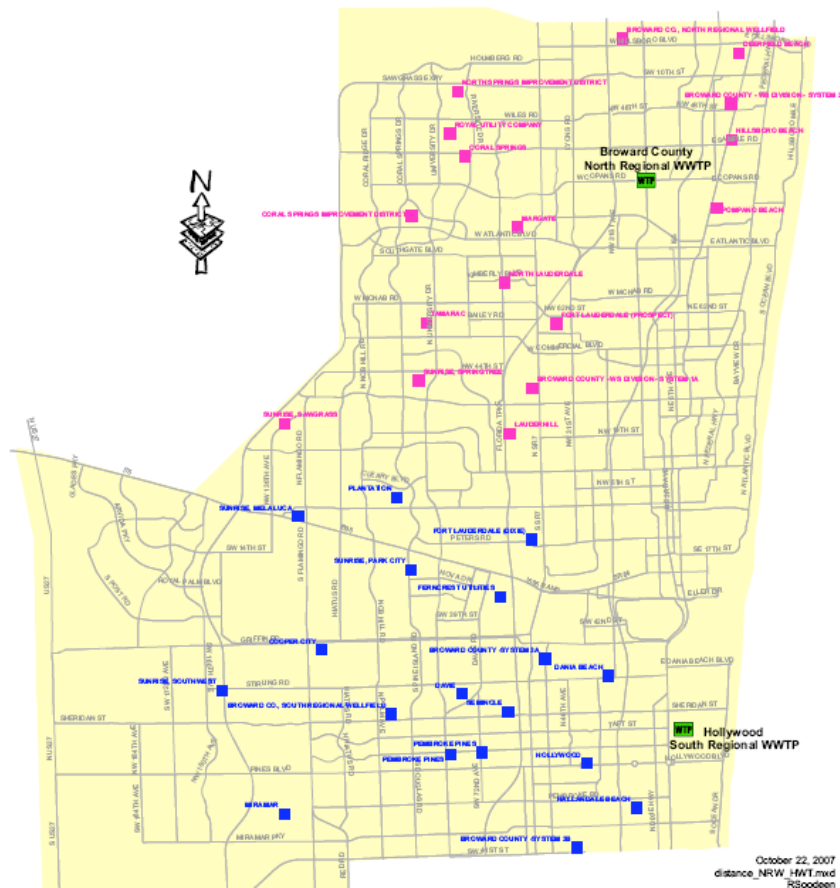
**Wellfield Location Relative to
NRWWTP & HSRWWTP**

Legend

- Wellfield closer to HSRWWTP
- Wellfield closer to NRWWTP

Broward County

Water Management Division



October 22, 2007
distance_NRW_HWT.mxd
R. Gooden
PC # 970

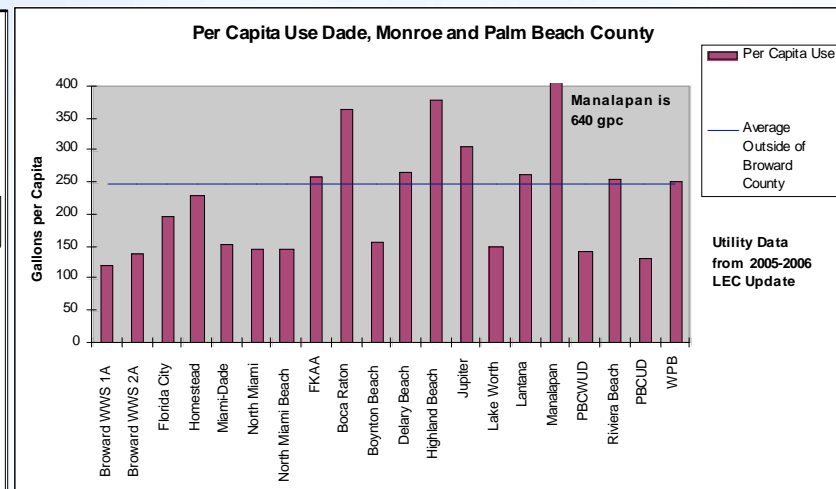
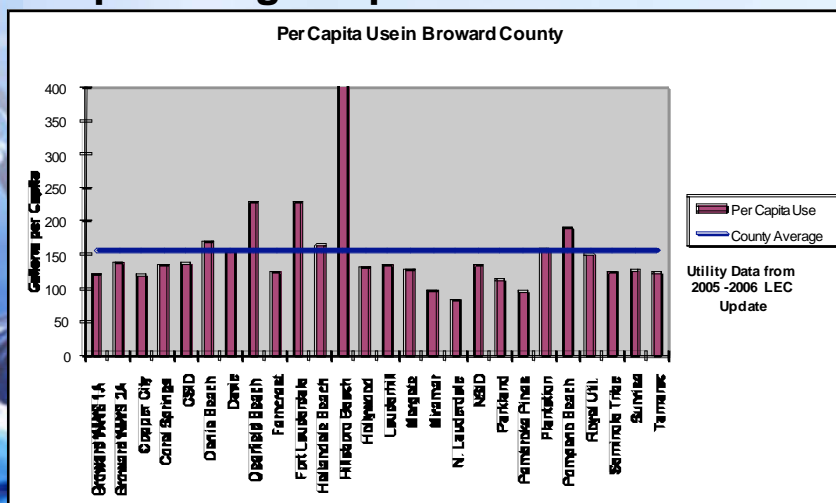
Wastewater as an Water Supply Resource

Utilizing wastewater as an alternative water supply resource is one of four current alternative water supply options:

- Florida Aquifer
- Desalination
- C51 Reservoir Project
- Highly Treated Wastewater for groundwater recharge

Treating wastewater for groundwater recharge is the costliest and most energy intensive of the four alternatives.

Broward County WWS is among the leaders in the tri-county area in low per capita usage of potable water.



Where do we go from here?

- Currently, WWS has negotiated an Effluent disposal master plan and Alternative Water Supply Master Plan. Both of these reports should be completed by February 2010 and will have cross-over elements with regards to effluent as a water supply resource. These plans will be presented to the BOCC in future workshops.
- Ultimately, cost will be a major factor in the decision process. The 11 Large Users of the NRWWTP will have input since they will be funding the improvements along with WWS retail wastewater customers.
- WWS will need to present a detailed plan to FDEP by July 1, 2013 addressing our plan to meet the requirements of this legislation.

Questions?